



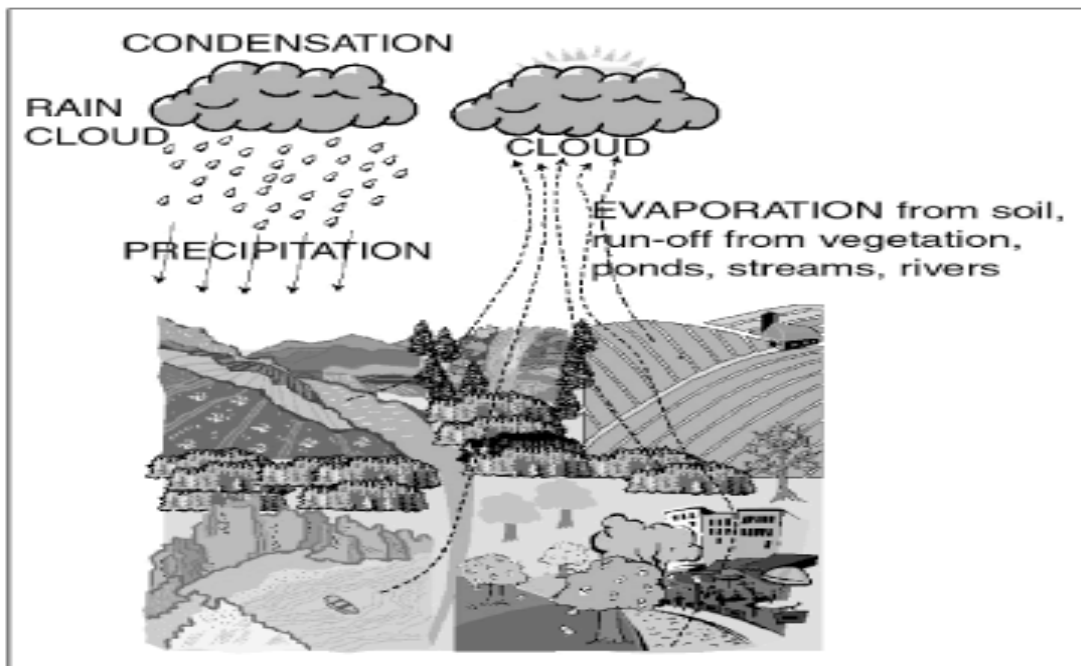
Grade 8 Science

***Released Items
Spring 2002***

- 1 Rock layers may be forced deep underground and exposed to high temperatures and pressures. These rocks change and become
- A rare metals.
 - B igneous rock.
 - C sedimentary rock.
 - D metamorphic rock.
- 2 In Michigan, the amount of water vapor in the air depends mostly on the
- A speed of the wind.
 - B temperature of the air.
 - C amount of oxygen in the air.
 - D shape of the clouds in the sky.

Use the information below to answer questions 8 through 11.

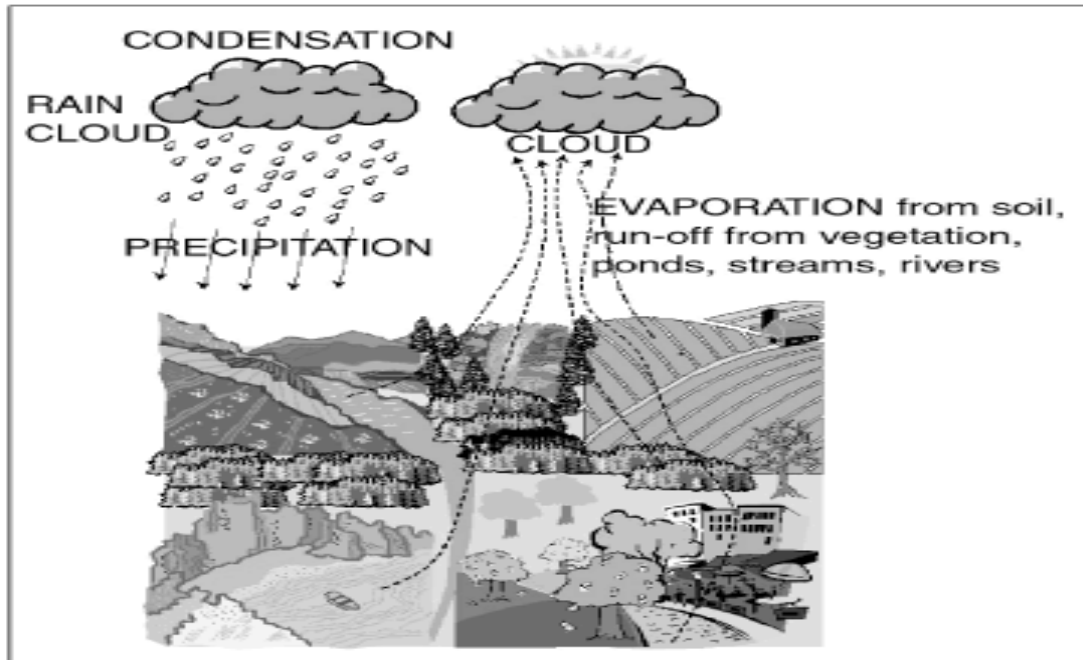
Over 70 percent of the Earth's surface is covered with water. Water comes from many different sources and exists in many different forms.



- 8 The picture above shows the water cycle on Earth. What can be concluded from this cycle?
- A Water remains in a constant state.
 - B Water only exists as a liquid on Earth.
 - C Water is constantly moving and changing.
 - D Water in the atmosphere does not return to Earth.
- 9 Water exists on Earth in three different physical states. Which of the following are forms of solid water on Earth?
- A ice and rain
 - B fog and rivers
 - C glaciers and hail
 - D water vapor and snow

Use the information below to answer questions 8 through 11.

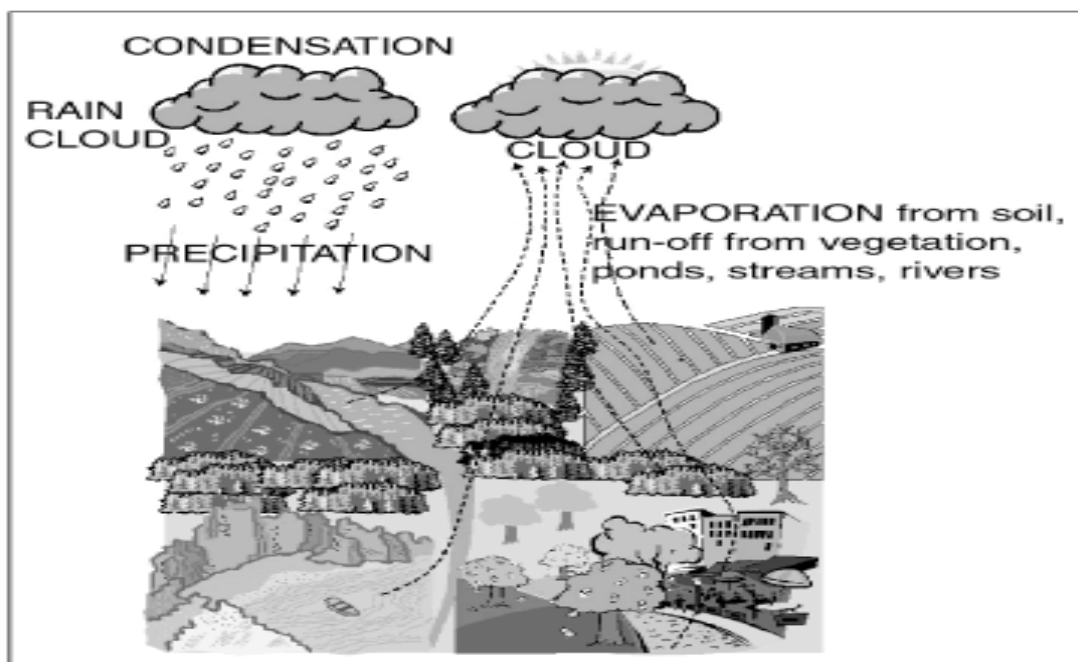
Over 70 percent of the Earth's surface is covered with water. Water comes from many different sources and exists in many different forms.



- 10 Sewage treatment plants have many benefits for the environment. What negative impact could occur at these facilities during heavy rainfall?
- A These facilities could overload, releasing pollution into the river.
 - B These facilities reduce evaporation of water from the river.
 - C These facilities can reduce the water level of the river.
 - D These facilities will attract more visitors to the river for recreational purposes.

Use the information below to answer questions 8 through 11.

Over 70 percent of the Earth's surface is covered with water. Water comes from many different sources and exists in many different forms.



11 3 points

When winter is over in Michigan, snow and ice begin to melt. Describe three things that can happen to this water.

**ANSWER THIS ITEM IN YOUR ANSWER BOOKLET.
NOTHING WRITTEN IN THIS TEST BOOKLET WILL BE SCORED.**

MEAP Grade 8 Science 2002**Item #11****Sample Response**

- It may be absorbed into the soil.
- It may flood.
- It may get polluted, dirty.
- It may runoff into natural reservoirs (i.e., lakes and rivers).
- It may run-off into man-made reservoirs (i.e., sewers).
- It may be taken up by plants.
- It may be taken up by animals (humans).
- It may evaporate and fall elsewhere as rain.
- It may condensate (this key element **must** be preceded by **and** clearly linked to “evaporate”).
- It may re-freeze (frost wedge).
- It may form standing water (i.e. puddle, lake).
- It may reenter the aquifer.

Scoring Guide

3 points = The student provides 3 acceptable descriptions.

Alternate 3-point response (complete water cycle):

includes all **3** elements of a water cycle (“It may evaporate, condensate, precipitate”).

2 points = The student provides 2 acceptable descriptions.

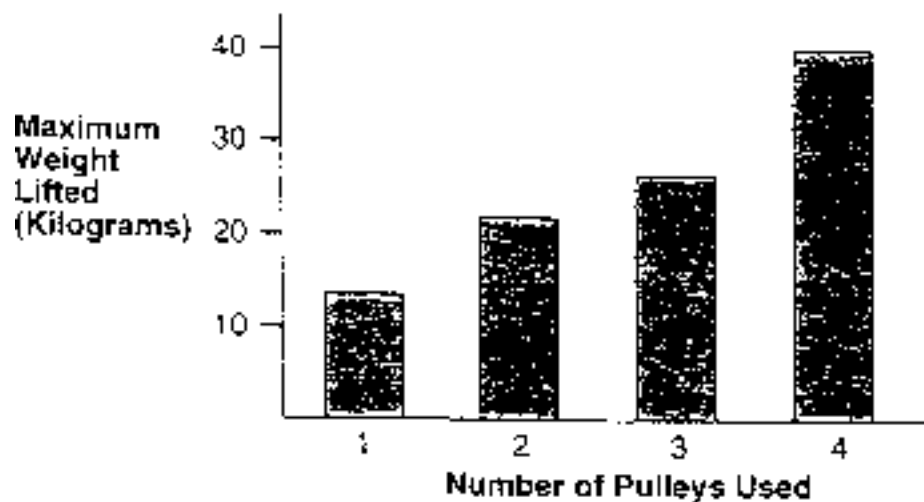
Alternate 2-point response (incomplete water cycle):

includes all **3** elements of a water cycle but not in the correct order (“It may condensate, precipitate, evaporate”).

1 point = The student provides 1 acceptable description.

0 points = The student provides 0 acceptable description.

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The person using the pulleys decided that four pulleys can lift four times as much weight as one pulley. Do the data support this claim?

- A Yes, because one pulley lifted 10 kilograms.
- B No, because four pulleys lifted only 40 kilograms.
- C Yes, because four pulleys lifted the most amount of weight.
- D No, because there was no data to show how much can be lifted by four pulleys.

- 16 Juan's class was investigating how fast ice cubes melt at different locations in the room. Which would be the **BEST** way to select ice cubes to use?
- A Measure the mass of several cubes and choose the ones that have the greatest mass.
 - B Take ice cubes from the same bag.
 - C Choose ice cubes that look about the same size.
 - D Measure the mass of several cubes and choose the ones that are closest in mass.
- 22 What must be true for a car to move forward at a constant speed? The forward force of the car is
- A increasing at a constant rate.
 - B greater than the force of gravity.
 - C balanced with the force of friction.
 - D greater than the backward force on the car.
- 42 A slow but gradual change in an ecosystem is
- A succession.
 - B habitation.
 - C biotic evolution.
 - D climax community.

- 43** Technology is the use and development of scientific knowledge for practical purposes. A person studying technology would say that
- A** technology has advantages and disadvantages.
 - B** all technology has advantages.
 - C** all technology makes the world a better place.
 - D** all technology has disadvantages.
- 44** Which of the following describes systems that must work together to bring oxygen to a muscle?
- I. digestion
 - II. respiration
 - III. circulation
 - IV. reproduction
- A** I, II
 - B** II, III
 - C** III, IV
 - D** I, IV
- 48** When the weather is cold, bees do not leave their hives. This is because they are
- A** warm-blooded vertebrates.
 - B** warm-blooded invertebrates.
 - C** cold-blooded vertebrates.
 - D** cold-blooded invertebrates.

- 49** The part of the flower that contains the ovary is called the pistil. If the pistil is removed, the plant **CANNOT** produce
- A** seeds.
 - B** petals.
 - C** leaves.
 - D** pollen.

Michigan Educational Assessment Program
Statewide Test Item Analysis
Science Grade 8
Winter 2002

District: MICHIGAN DEPARTMENT OF TREASURY
School: STATEWIDE SCHOOL DATA
Codes: District- 99999 School- 0001
Run Date: 07/26/2002

Multiple Choice Percent Answering by Response							Constructed Response Percent Answering Number of Points										Percent Scoring Condition Codes			
Item No.	Benchmark Code	A	B	C	D	Out Mult	Item No.	Benchmark Code	0.0	0.5	1.0	1.5	2.0	2.5	3.0	A	H	L	D	
Constructing							Constructing													
03	1MS5	2	4	5	88*	OK	59	1MS5	15	3	4	3	58	4	9	1	0	0	3	
16	1MS4	6	6	25	63*	OK	Life Science													
17	1MS2	8	21	8	63*	OK	55	5MS2	20	4	28	5	11	5	38	1	0	0	2	
19	1MS5	6	86*	4	5	OK	Physical Science													
29	1MS5	17	10	40*	12	OK	28	4MS1	71	1	11	1	8	2	5	1	0	0	2	
34	1MS1	7	29	93*	21	1	Earth Science													
31	1MS3	45	42*	6	8	1	21	2MS2	2	1	7	3	16	8	42	0	0	8	1	
34	1MS5	5	7	7	84*	1														
36	1MS2	5	2	3	91*	OK														
38	1MS2	4	4	87*	4	1														
Reflecting																				
04	1MS1	21	5	62*	13	OK														
13	1MS1	13	42*	34	4	OK														
13	1MS1	9	87*	3	2	OK														
29	1MS1	41*	6	14	18	1														
27	1MS1	8	11	25	55*	OK														
37	1MS1	3	43*	4	5	1														
43	1MS4	74*	8	11	4	1														
46	1MS2	14	77*	3	4	1														
47	1MS1	42	12	41*	4	1														
Life Science																				
32	5MS4	75*	12	5	10	1														
44	3MS2	7	11	70*	12	1														
41	2MS4	5	3	20	72*	1														
42	5MS4	37*	28	24	9	1														
49	2MS4	7	77*	10	6	1														
45	3MS1	3	6	86*	5	1														
48	2MS1	18	55	14	36*	1														
44	2MS4	49*	7	6	37	1														
50	4MS1	44*	4	17	10	1														
Physical Science																				
12	5MS2	32	33*	29	6	OK														
19	4MS4	4	13	64*	13	1														
18	1MS2	56*	4	12	25	OK														
21	3MS2	35*	4	7	3	OK														
22	3MS2	17	15	40*	28	OK														
23	1MS3	33*	5	5	3	OK														
24	4MS2	5	0	15	73*	1														
25	4MS4	14	42*	28	14	OK														
26	4MS2	8	11	9	71*	OK														
Earth Science																				
01	1MS2	4	27	25	44*	OK														
02	3MS1	4	73*	18	5	OK														
05	1MS1	2	31*	2	15	1														
06	1MS4	44*	15	19	7	OK														
07	4MS2	4	9	5	81*	OK														
08	3MS2	4	4	88*	2	OK														
04	2MS1	14	2	83*	5	OK														
10	2MS4	78*	10	7	3	1														
52	1MS3	2	16	60*	4	OK														
Number of Students Included: 123616																				

Condition Codes for the Constructed Response Items:

A: O-Trait
B: Elicited
C: Written in language other than English
D: Blank, refused to respond

Using the Benchmark Code

You can find the individual items in their corresponding sections in the Michigan Curriculum Framework, approved in 2020.

Each benchmark code contains four characters. The first character, an Arabic numeral, identifies the current standard under the specific strand. The next two characters represent the grade level, and the last character in the code identifies the document (LS = Elementary School, MS = Middle School, and HS = High School). The number following these letters represents the specific benchmark in the strand designated by the grade level.

EXAMPLE

An item with benchmark code 1MS2 under Using Scientific Knowledge in Life Science is referring to content standard 1, Use 1. Within this content standard, you need to look at grade's second benchmark number 1, "explain why specialized cells are needed by plants and animals" to find the match.

CALCULATIONS

Making inferences about students based on their answers to individual items is inadvisable due to the low reliability of single item measures. These data should only be used to make inferences about the performance of groups that are classroom size or larger.

Conditions Under for the Constructed Response Items:

- A. O.T.-task
- B. Eligible
- C. Written in language other than English
- D. Blank, refused to respond

Using the Benchmark Codes

You can find the individual items in their corresponding sections in the Michigan Curriculum Framework, approved in 2000.

Each benchmark code contains four characters. The first character, an Arabic numeral, identifies the current standard under the specific strand. The next two characters represent the grade level, column designation in the content standards documents (LS = Elementary School, MS = Middle School, and HS = High School). The number following these letters represents the specific benchmark in the column designated by the grade level.

EXAMPLE

An item with benchmark code 1MS2 under Using Scientific Knowledge in Life Science is referring to content standard 1, Use 2. Within this content standard, you need to use at least a second benchmark number 2. "Explain why specialized cells are needed by plants and animals" to find the match.

CALCULON

Making inferences about students based on their answers to individual items is inadvisable due to the low reliability of single item measures. These data should only be used to make inferences about the performance of groups that are classroom size or larger.

Out/Mult = Omit and Multiple Responses
= Number of students percent rounds to zero